A Study on Happy Rural Environment Design Based on the Regional Culture of Intangible Cultural Heritage

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Abstract

As globalization intensifies and regional culture and features are slowly fading out, environment design in rural areas will be the last front to maintain these culture features in China. To this end, this paper makes the protection of intangible cultural heritage in rural areas, excavation of regional cultural characteristics and improvement of the characteristics of happy village environment its main objectives of study. It first looks at the connotation of regional culture and happy rural environment, briefly discusses the relationship between the design of happy rural environment and regional cultural characteristics of intangible cultural heritage, puts forward the construction of an evaluation index system of the carrying capacity of the happy rural environment, and uses City A as an object of empirical analysis. It provides some reference and ideas for the design and study of happy rural environment in China.

Keywords: Regional Culture, Intangible Cultural Heritage, Environment Design.

1. RESEARCH BACKGROUND

1.1 Literature review

Under the continuous impact of foreign cultures, characteristics of rural environment converge and distinctive regional characteristics are losing. That explains why in recent years the construction of regional characteristic in rural areas has received unprecedented attention in the field of environment design. Designers begin to build a new type of happy rural environment based on the cultural characteristics of intangible cultural heritage, with landscape design concept of coordinating local characteristics and local culture. Despite certain progress made in this aspect, many problems still exist and demands prompt solution in the practical environment construction in China’s rural areas. First, many designers remain on the surface, instead of exploring the true nature of happy rural environment. Second, in the face of the strong invasion of foreign cultures, it is hard for China’s regional rural culture to learn to seek common ground while reserving differences and achieving harmonious development. It is precisely because of this that the paper comes into being (Li, 2014).

1.2 Purpose of research

According to National Bureau of Statistics in 2015, rural population in China accounted for about 40% of the total population. With such a great proportion of rural population, it is important to build a happy rural environment. Rural environment has witnessed the relation of mankind and the nature and is a precious resource left behind in several thousand years. This paper studies the design of happy rural environment based on regional culture of intangible cultural heritage, which will protect the geographical distinctive culture and strive to improve the quality of life for rural residents (Zhao, 2010).

2. AN OVERVIEW OF RELATED CONCEPTS

2.1 Cultural connotation of regional characteristics

Geography can be interpreted from space and time. It mainly refers to the range of a specific location and its appearance under the joint action of the natural environment and the space-time environment in the land of a particular cultural and natural characteristics. Geography not only represents the natural scenes, but also regional culture that evolves with social progress. As an ideology, culture also reflects the political and economic
development. The regional characteristics of culture are very prominent and different cultures will be formed in different regions. It is known to all that the Chinese culture has evolved in the continuous integration of cultures in various regions, such as Sanxingdui, Longshan, Hemu and Longshan cultures (Chen, 2015). Therefore, the culture with regional characteristics is the result of mutual merging and operation of specific historical conditions and geographical environment. In addition, regional culture is manifested in local customs, natural environment, etc. highly creative and inclusive, and will exhibit different cultural styles with time. These excellent regional culture will become our rich cultural heritage and landscape wealth. (See Figure 1 for ancient regional characteristic culture)

![Figure 1. Ancient Regional Characteristic Culture](image)

2.2 An overview of happy rural environment

Cultural and the natural environments, which coordinate with each other, are the main elements in the design of happy rural environment (Li, 2015). Cultural environment mainly includes non-material environment and the material environment, and the latter covers political factors, religious beliefs, lifestyles, values and production relations. Material environment mainly includes animals and plants, production tools and vehicles, buildings, physical settlement, etc. For the natural environment, there are climate, soil, animals and plants (Li, 2014).

Happy rural environment has geographical, continuity and times features. Geographical feature refers to the unique lifestyles and customs of a country or a region formed in the development of social and natural environment. It is the main cause of differences in rural environment. As people generally live a stable life, the environment in rural areas display certain continuity. Therefore, when designing the environment of happy rural areas, it is necessary to form a landscape of cultural atmosphere and characteristics of the times, and pay attention to the inheritance and development of intangible cultural heritage. Rural environment changes with space and time, and people in a particular region can be influenced by other regional cultures as time goes by. This is also why rural environment has characteristics of the times (Shi, 2012).

3 THE RELATIONSHIP BETWEEN THE DESIGN OF HAPPY RURAL ENVIRONMENT AND REGIONAL CULTURAL CHARACTERISTICS OF INTANGIBLE CULTURAL HERITAGE

3.1 Characteristics of the cultural connotation in the design of happy rural environment

Regional culture is the result of integration of different cultures. It is open and not static. Regional culture is interrelated with the environment around it in its development, and constantly absorbs foreign cultures, which in turn promotes the healthy development of a culture with regional characteristics.

Moreover, although a complete environmental system is relatively isolated and stable, its environmental system will also communicate with the surrounding environment after constant adjustment and evolution, follow the law of historical development, and then solve problems arise in this process through interaction with the outside world and self-optimization to eventually form unique characteristics and style (Zhang, 2011). This shows that self-absorption and compatibility constitute a complete process of formation of regional culture. Therefore, it is necessary to conform to changes of natural laws and reflect the openness of happy rural environment in the design of it. (See Table 1)
### Table 1 The Openness of Regional Cultural Characteristics of Intangible Cultural Heritage

<table>
<thead>
<tr>
<th>Intangible cultural heritage</th>
<th>Regional characteristics and cultural characteristics</th>
<th>Features of intangible cultural heritage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nanjing brocade weaving skills</td>
<td>Nanjing brocade weaving skills represent the highest level China brocade, also reflects the unique geographical characteristics of Nanjing brocade.</td>
<td>![Image of Nanjing brocade]</td>
</tr>
<tr>
<td>Chinese traditional wooden structure construction skills</td>
<td>The construction technique system lasted for seven thousand years and spread all over China. It was the representative of the ancient architecture technology in the east.</td>
<td>![Image of traditional wooden structure]</td>
</tr>
<tr>
<td>Chinese Korean folk music and dance</td>
<td>Chinese Korean folk music and dance has distinctive national characteristics. It expresses the belief of respecting nature, and becomes an indispensable part of the local people in North Korea.</td>
<td>![Image of Chinese Korean folk music and dance]</td>
</tr>
</tbody>
</table>

### 3.2 The Importance of regional culture with intangible cultural heritage in the design of happy rural environment

Regional landscape is a special geographical and spatial concept of certain value formed in the interaction between humanity and nature, and gives rise to corresponding landscape pattern together with natural and urban landscapes. It can directly reflect the characteristics of regional landscape. Therefore, in the design of happy rural environment, regional culture with intangible cultural heritage can provide strong cultural support to accelerate the construction of happy rural environment and the inheritance of special culture in local areas (Liu, 2011).

### 4. CONSTRUCTION OF THE EVALUATION INDEX SYSTEM FOR THE CARRYING CAPACITY OF HAPPY RURAL ENVIRONMENT WITH CHARACTERISTICS OF INTANGIBLE CULTURAL HERITAGE

#### 4.1 Thoughts for the construction

Environmental carrying capacity mainly refers to the limits of activities, economic and social support capabilities that can be endured without endangering human development in a given area. The establishment of the evaluation index system of rural environmental carrying capacity will promote the sustainable development of rural areas, enhance their cultural taste, level and connotation, and boost their economic development. It will provide important theoretical basis for carrying out research on rural environment design and improving rural environment (Wu, 2016).

#### 4.1.1 Theory basis of the index model
First of all, the theory of sustainable development plays an important role in the study of happy rural environment design. It takes the environmental point of view, stresses the significance of rural environment and development, so as to improve the economic construction and per capita income of rural residents. Regional features of intangible cultural heritage plays an important role in promoting the study. Therefore, to advocate sustainable development can promote the sustainable utilization their own advantages in resources and environment for coordinated development of ecology, society and economy (Tian, 2016). The objectives of sustainable development are: First, to improve the quality of life for rural residents; second, to enhance residents’ ecological awareness and clarify the relationship between economic and environmental benefits; and third, to promote sustainable development of rural economy by relying on the cultural characteristics of intangible cultural heritage. Thus, as one of the ways to judge the sustainable development of rural areas, environmental carrying capacity takes into consideration all aspects of regional characteristics of the intangible cultural heritage in rural areas, the economy and the environment. It puts forward reasonable design measures for rural environment so as to promote rural sustainable development (Wang, 2016).

Second, the system science theory is the methodology, based on the control theory and information theory, to facilitate the interaction between the various elements. From the model of happy rural environment carrying capacity based on the regional culture of intangible cultural heritage, the happy rural environment system is a diverse one that needs to take into account the relationship between social, economic and environmental benefits to ensure coordination at all levels. According to the content of system science theory, the carrying capacity of happy rural environment is related to many factors, such as society, economy and environment, which requires comprehensive consideration of all aspects and levels of the design of happy rural environment to ensure that the system can conduct self-regulation under certain interference (Xu, 2016).

### 4.2 Steps to determine the weight of indicators

The happy rural environment indicator system is designed to reflect the stage of design for the rural environment based on intangible cultural heritage, evaluate its rationality and appropriateness, find out the limiting factor of the happy rural environment carrying capacity, and offer appropriate solutions (Fan, 2015). In addition, this model adopts a variety of index selection methods, including expert consultation and theoretical analysis, to select five well-utilized rural environmental carrying capacity evaluation indexes. Please refer to Table 2 for details.

**Table 2 Index Selection of Rural Environmental Carrying Capacity Evaluation System**

<table>
<thead>
<tr>
<th>Serial number</th>
<th>Index layer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The protection degree of rural intangible cultural heritage</td>
</tr>
<tr>
<td>2</td>
<td>Tourism and input output ratio</td>
</tr>
<tr>
<td>3</td>
<td>Abundance of natural resources</td>
</tr>
<tr>
<td>4</td>
<td>Villagers' awareness of environmental protection</td>
</tr>
<tr>
<td>5</td>
<td>Villagers' attitudes towards the design of happy rural environment</td>
</tr>
</tbody>
</table>

After selecting the corresponding indicators, this paper uses analytic hierarchy process to determine the weight of each indicator. The main steps are:

First, set up the structural model of the happy rural environment indicator system, divide the system into indicator level, system level and target level, and there is a subordinate relationship among these three levels.

Second, construct judgment matrix, compare indicators in pairs, and indicate the relationship between these pairs.

Third, calculate the eigenvalue \( \lambda \) and eigenvector of the matrix, so that

\[
\lambda^*M = A^*M
\]

(1)

Where \( M \) is the weight of the corresponding element. Then conduct consistency test in the following steps: First, calculate the relevant indicators

\[
CI = \frac{\lambda - 1}{n - 1}
\]

(2)
Among them, \( n \) is for the order, select the maximum eigenvalue \( \lambda \), \( CI \) as a consistent indicator. When \( CI=0 \), the matrix is quite stable and does not need to adjust. Second, conduct consistency test:

\[
R = \frac{CI}{RI}
\]  

(3)

Where when \( R<0.1 \), the matrix is consistent and meet the requirements of the model. \( RI \) is the average random consistency index, and the specific values are shown in Table 3.

<table>
<thead>
<tr>
<th>Order number</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>The value of ( RI )</td>
<td>0.56</td>
<td>0.87</td>
<td>1.21</td>
<td>1.26</td>
<td>1.43</td>
<td>1.45</td>
</tr>
</tbody>
</table>

Table 3 Mean Random Consistency Index Values

Fourth, calculate the weight of each judgment matrix relative to the previous level from top to bottom, and make one-time test. The specific formula is as follows:

\[
R = \frac{\sum_{j=1}^{k} m_j CI_j}{\sum_{j=1}^{k} m_j RI_j}
\]  

(4)

Among them, \( m_j \) is the weight of different elements, \( RI_j \) and \( CI_j \) are random consistency and consistency indicators respectively for different levels of the judgment matrix. When \( R<0.1 \), the ordering results at all levels satisfy the principle of consistency.

4.2 Analysis of the evaluation index system of happy rural environment carrying capacity

When evaluating the carrying capacity of resources and the environment, we must first evaluate the appeal of rural resources, rural intangible cultural heritage, the protection of rural customs and the accessibility of rural landscape. Use questionnaire survey for subjective quantitative description of intangible cultural heritage in villages.

4.2.1 Calculation of resources and environment carrying capacity based on geographical features

Resources and environment carrying capacity based on geographical features reflect the carrying capacity of resources and environment for human activities from different perspectives of single indicator. In this paper, the carrying capacity of resources and environment based on geographical features is mainly calculated by using weighting methods, as is shown below:

\[
TECC = \sum_{j=1}^{M} P_j M_j
\]  

(5)

Among them, \( n \) refers to the number of indicators, \( M_j \), weight of the indicator, \( P_j \), the rating of one of the selected indicators, and \( TECC \), the comprehensive score of the carrying capacity of happy rural environment based on the characteristic culture of intangible cultural heritage.

4.2.2 Happy rural environment carrying capacity index

The paper applies the generally accepted method of measuring the carrying capacity index of rural environment to calculate happy rural environment carrying index. Environmental carrying capacity \( TECR \) refers to the amount of activity of local people within a certain period of time. Capacity saturation \( TECI \), also known as the carrying capacity index of rural environment, is the ratio of carrying capacity of rural environment to that of local cultural environments. It indicates the utilization of happy rural environment carrying capacity in regional culture of intangible cultural heritage, and is calculated as follows:

\[
TECI = \frac{TECR}{TECC}
\]  

(6)
Based on the analysis, this paper classifies the carrying index of rural environment: overloading if the index is higher than 1.0, saturated when it equals 1.0, moderate when it is between 0.8 and 1.0, and underdeveloped or not making full use of the advantages of the regional culture of intangible cultural heritage when it is below 0.8.

5. EMPIRICAL ANALYSIS

5.1 Overview of City A

This paper selects City A as the object of this empirical analysis. City A is located in area of minorities. Thanks to its special customs, it has one project selected as an intangible cultural heritage. Besides, it is rich in mineral resources and water resources, and is the famous ancestral land of Hakka and old revolutionary base area. With this regional culture, City A spares no efforts on tourism industry and provides great support to the design of the local happy rural environment. Figure 2 shows the economic income of tourism in City A in recent years.

![Figure 2. City A Tourism Gross Income Growth Diagram](image)

5.2 Analysis and evaluation of the carrying capacity of happy rural tourism in City A

This paper investigates the status of rural tourism of City A in 2014 by network survey and field research on residents, tourists, tourism managers, and collecting relevant information from local bureau of construction, statistics and tourism. The evaluation of carrying capacity of rural tourism environment of City A is conducted based on the analysis of these data (Wang, 2016).

According to the above calculation method and the related data obtained, the tourism environment carrying capacity index of rural areas in City A is calculated as 0.79. As a conclusion, the carrying capacity of the rural tourism environment of City A is low and has considerable room for development. Active development of tourism will not damage the construction of happy rural environment, rather, it will improve the quality of life of local residents. Therefore, City A should leverage the advantages of intangible cultural heritages in local cultural to promote the development of local tourism industry, further optimize the resource advantages of rural areas of City A, improve the quality of local services and ultimately promote the economic development in rural areas.

6. CONCLUSION

In summary, China’s abundant in rural resources, of which the deep culture of rural areas deserves our study and protection (Dai, 2016). However, in the design of happy rural environment, the culture of regional culture of intangible cultural heritage is gradually forgotten and neglected due to the impact of globalization. Given all this, this paper has explored the connotation of regional cultural and the significance of cultural features of the intangible cultural heritage in the design of happy rural environment, providing the theoretical basis for the design and study of happiness rural environment in China.

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